

EXHIBIT 3

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA
ERIE DIVISION

DEMETRIUS BROWN,)	
Plaintiff,)	
)	
)	
v.)	Civil Action No. 04-379E
)	
U.S. JUSTICE DEPARTMENT,)	
BUREAU OF PRISONS, FCI MCKEAN,)	
WARDEN JOHN J. LAMANNA,)	
REGIONAL DIRECTOR D. SCOTT)	
DODRILL, MEDICAL DIRECTOR)	
NEWTON E. KENDIG, DIRECTOR)	
HARLEY G. LAPPIN,)	
Defendants.)	

**DEMETRIUS BROWN'S AFFIDAVIT
TO PERSONAL INJURIES**

I, DEMETRIUS BROWN, herein as Plaintiff, hereby affirm and declare under penalty of perjury, 28 U.S.C. §1746, the following:

1. I, DEMETRIUS BROWN, Reg. No. 21534-039 and herein as Plaintiff, am a Federal Prisoner currently incarcerated at FCI RayBrook. That, I currently am serving a 360 month sentence from the United States District Court in the District of Minnesota. That, upon entering federal prison in July, 1997 at FCI McKean, I have been continuously exposed to Environmental Tobacco Smoke. That, upon transfer to FCI RayBrook in November, 2004, I had been continuously exposed to Environmental Tobacco Smoke until November, 2005 despite a national change in policy. See **Exhibit**

1c and 1d.

2. I, prior to imprisonment, beginning May 23, 1996, had not been exposed to Environmental Tobacco Smoke. That, I had no exposure to Environmental Tobacco Smoke during my initial intake or between transfers. That, my only exposure to Environmental Tobacco Smoke came upon entering inside the general prison populations at FCI McKean and recently FCI RayBrook. See **Complaint at ¶23 and Exhibit 1c and 1d.**

3. As a result of my exposures in the general populations among smoking inmates, I suffered and am currently suffering from periodic, as well as continual personal injuries. My personal injuries are nausea, an inability to eat, headaches, chest pains, difficulty breathing, numbness in limbs, teary eyes, itching & burning skin (Pityriasis Rosea), dizziness, sore throat, coughing, and production of sputum, etc. And, if upon proper examination, there may be complications of other diseases, including cancer. See **Exhibit 3a-3e.**

4. I have reviewed the Declaration of Dawn M. Marini, the Clinical Director at Federal Correctional Institution (FCI) RayBrook, New York at Defendants' Exhibit 2 and;

a) I affirm the Medical Record referred to by Dawn M. Marini at Document 2a, pp. 13, 15 as I interpreted it at the time, read the question, Have you ever had? yes/no. Marijuana. I answered yes. Hence, the fact I was newly admitted into prison from a previous habitation in society.

b) I affirm the Medical Record referred to by Dawn M. Marini at Document 2a, p. 11 as I interpreted it at that time, read the question, Have you now? yes/no marijuana. I answered no. Hence, the fact I had been incarcerated for over 8 yrs thus, abstained from such.

c) I affirm the Medical Record referred to by Dawn M. Marini at Document 2a, pp. 23, and 44 as not identifiable to Plaintiff. That, Plaintiff clearly is named Demetrius Brown, Reg. No. 21534-039 and has never worked in Unicor, contrary to the person named on pp. 23 and 44, that being Thomas Brown, Reg. No. 42134-061.

d) I affirm the Medical Record referred to by Dawn M. Marini at Document 2a, p. 19, that an inmate other than Plaintiff was diagnosed with a Staph Disease while living as Plaintiff's cell mate. That, Plaintiff was involuntarily referred to Medical for evaluation of Staph exposure.

f) I affirm the Medical Record referred to by Dawn M. Marini at Document 2a, p. 17, that Plaintiff did not fill or answer neither of the questions asked, nor is it Plaintiff's signature on the document.

5. Plaintiff affirms the Declaration made by Dawn M. Marini, at Exhibit 2 stating, "attached is a true and correct copy of the prison medical record of inmate Demetrius Brown, Register Number 21534-039," is indeed not true and correct. As stated, Demetrius Brown, Reg. No. 21534-039 is clearly not the person described in Exhibit 2a, pp. 23 and 44, that being Thomas Brown, Reg. No. 42134-061. The fact that Plaintiff did not review nor sign the record referred to at Exhibit 2a, p. 17

draws into question the truth and correctness of the record, as well as the accuracy of certain questions as they are phrased ambiguously on the intake examination forms at Exhibit 2a, pp. 11, 13, and 15. That, the entire veracity of the Medical Records pertaining to Plaintiff is in question where obvious errors are realized but, also whether not so obvious errors are present.

6. Plaintiff has recently, as of January 1, 2006, suffered personal injuries thought to at first been associated with eating bad food given by the Prison Officials causing an outbreak of symptoms resembling the "Hives." However, to Plaintiff's dissatisfaction after submitting two requests for a medical evaluation and seen by Clinical Director Dawn Marini was told correctly on January 9, 2006 that Plaintiff was suffering from Pityriasis Rosea.

7. That, this was a kind of rare skin rash that had no known cause. That, it is a rash associated with oval like warts, reddish in kind with a severe itch. That, I was told, it was nothing the Medical Staff could or would do to treat the rash because there is no known cure. However, I was told that as far as the itching was concerned, the Medical could provide a cream but, which in this case, the rash covered my entire torso and a cream would be inadequate in supply. Instead, the Clinical Director instructed that I be given orally, a pill medication to reduce the itching. That, the Medication Hydroxyzine is to be taken at 50 mg. for 30 days with a refill for prescription. That, I was informed that Pityriasis could last for several months, mutating the entire body if

possible. See **Exhibit 3a**. That, I was specifically rebuffed by Dawn M. Marini for accounting that the rash was probably from a package of sunflower seeds handed out by Prison Officials during the Christmas Holiday Season or for the mozerella cheese sold by the Prison Commisary as not being any of the causes associated with Pityriasis Rosea.

8. That, afterward, I conducted my own research at the Prison Leisure Library by logging in time to discover exactly what is Pityriasis Rosea and its cause. That, I was able to discover using the Webster's Third New International Dictionary Unabridged, the definition of Pityriasis Rosea. That, it stated: 1. One of several skin diseases marked by the formation and desquamation of branny scales; 2. A disease of domestic animals marked by dry epithelial scales or scurf due to alteration of the function of the sebaceous glands and possibly associated with digestive disorders. Further study of what the meaning of sebaceous glands led to: -any of the small sacculated glands lodged in the substance of the derma, usually opening into the hair follicles, and secreting an oily greasy material composed in great part of fat which softens and lubricates the hair and skin. See **Exhibit 3b**.

9. That, here, the discovery found that I indeed have not only a rash of the skin but, that it is a skin disease. The disease marked by its characteristics is consistent with the suffering Plaintiff has been complaining about due to his exposure to Environmental Tobacco Smoke. That, Plaintiff is suffering from

loss of appetite, skin irritations or itching, the discoloration of skin, loss of hair follicles, etc. The skin disease, Pityriasis Rosea, as stated above causes "dry epithelial scales or scurf due to **alteration** of the function of the sebaceous glands." Plaintiff affirms this is true concerning his exposure to Environmental Tobacco Smoke and will attest that such exposure is the likely cause of the skin disease Pityriasis Rosea, despite no known causes as informed by Dawn M. Marini.

10. Plaintiff affirms that he has requested and was seen by PA Huges at FCI RayBrook concerning a rash in kind and discoloration of his skin previously. However, Plaintiff's claim was dismissed as a non concern, despite being educated as to the issue. See **Defendants' Exhibit 2a, p. 18**. Nonetheless, the non-concern became more of a concern resulting in the skin disease, Pityriasis Rosea. As Clinical Director, Dawn M. Marini, admitted, the initial rash or Mother Rash was the start to the proliferation of the rash spreading and covering my entire torso.

11. Plaintiff affirms that after entering prison and upon being exposed to Environmental Tobacco Smoke, he has developed a blurring of the vision. Although not severe, but severe enough to have to buy reading glasses and to have on hand eye drops to stop the itching and reduce the redness. Plaintiff affirms that his right eye has a distinctive red marking near the pupil which Plaintiff believes is developed from exposure to Environmental Tobacco Smoke, thus causing the blurring which also possibly is

cancerous. See **Exhibit 3c**.

I, DEMETRIUS BROWN, hereby affirm and declare under penalty of perjury, 28 U.S.C. §1746, that the foregoing is true and correct.

2/6/06
Dated

Demetrius Brown

EXHIBIT 3a

COMMON USES: This medicine is an antihistamine used to treat anxiety, to relieve itching caused by allergic conditions, and to cause drowsiness. It may also be used to treat other conditions as determined by your doctor.

BEFORE USING THIS MEDICINE: INFORM YOUR DOCTOR OR PHARMACIST of all prescription and over-the-counter medicine that you are taking. Inform your doctor of any other medical conditions, allergies, pregnancy, or breast-feeding.

HOW TO USE THIS MEDICINE: Follow the directions for using this medicine provided by your doctor. THIS MEDICINE MAY BE TAKEN WITH FOOD if it upsets your stomach. STORE THIS MEDICINE at room temperature in a tightly-closed container, away from heat and light. IF YOU MISS A DOSE OF THIS MEDICINE and you are using it regularly, take it as soon as possible. If it is almost time for your next dose, skip the missed dose and go back to your regular dosing schedule. Do not take 2 doses at once.

CAUTIONS: THIS MEDICINE WILL ADD TO THE EFFECTS of other depressants and alcohol. Ask your pharmacist if you have questions about which medicines are depressants. DO NOT DRIVE, OPERATE MACHINERY, OR DO ANYTHING ELSE THAT COULD BE DANGEROUS until you react to this medicine. Using this medicine alone, with other medicines, or with alcohol may lessen your ability to drive or to perform other potentially dangerous tasks. Caution should be used in the elderly since they may be more sensitive to the effects of this drug. FOR WOMEN: IF YOU PLAN ON BECOMING PREGNANT, discuss with your doctor the benefits and risks of using this medicine during pregnancy. IT IS UNKNOWN IF THIS DRUG IS EXCRETED in breast milk. DO NOT BREAST-FEED while taking this medicine.

POSSIBLE SIDE EFFECTS: SIDE EFFECTS, that may go away during treatment, include drowsiness or dry mouth. If they continue or are bothersome, check with your doctor. If you notice other effects not listed above, contact your doctor, nurse, or pharmacist.

OVERDOSE: If overdose is suspected, contact your local poison control center or emergency room immediately. Symptoms of overdose may include unusual drowsiness and dizziness.

ADDITIONAL INFORMATION: DO NOT SHARE THIS MEDICINE with others for whom it was not prescribed. DO NOT USE THIS MEDICINE for health conditions. KEEP THIS MEDICINE out of the reach of children. IF USING THIS MEDICINE FOR AN EXTENDED PERIOD OF TIME, obtain refills before your supply runs out.

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FCI RAY BROOK PHARMACY (518) 897-4000
PO BOX 300 - RAY BROOK, NY 12977
368326 E. SWEATT 01/09/06
BROWN, DEMETRIUS 21534-039
FCI RAY BROOK - A01-147U
PILL LINE TAKE TWO TABLETS (50MG) @ 1930

HYDROXYZINE 25 MG TAB #2
(0)Refills 01/09/2006 LIS RxExp 02/07/06

CAUTION: Federal/State law prohibits transfer of this drug to any person other than patient for whom prescribed.

Pityriasis
rosea

EXHIBIT 3b

SBC Yahoo! Mail

Search
the Web



Welcome,
[Sign Out, My Account]

Health Ho

800-865-1125 Cancer AnswerLine

Home Healthy Living Diseases & Conditions Health News Groups & Boards Drug Guide Site

Search All Yahoo! Health Search

Top New Year's Searches on Yahoo! Health: resolutions, weight loss, healthy habits, fitness

GET HEALTHY NOW - Lose weight. Find love. Achieve balance.

GET FIT IN 2006 with tips from Gabrielle Reece and

Sponsored by: NIKEWM

Encyclopedia provided by: Healthwise

Pityriasis Rosea

Topic Contents

Topic Overview

Related Information

References

Credits

Related Encyclopedia Topics: [Ringworm of the Skin](#), [Skin Changes](#), [Tinea Versicolor](#)

Topic Overview

What is pityriasis rosea?

Pityriasis rosea is a harmless, common skin problem that causes a rash. Although it can occur at any age, it is most often in those between the ages of 10 and 35.

See an illustration of [pityriasis rosea](#).

What causes pityriasis rosea?

The cause of pityriasis rosea is unknown. Unlike many other skin conditions, it is not an [allergic reaction](#) or caused by [fungus](#) or [bacteria](#). Experts suggest that it may be caused by a virus, although it does not seem to spread from person to person (contagious) as most viruses do.

What are the symptoms?

Pityriasis rosea causes a rash.

The rash often begins with a single, round-to-oval, pink patch that is scaly with a raised border (herald patch). It ranges from 2 cm (0.8 in.) to 10 cm (3.9 in.). The larger size is more common. See an illustration of a herald patch. Days to weeks later, salmon-colored, 1 cm (0.4 in.) to 2 cm (0.8 in.) oval patches appear in batches on the abdomen, chest, back, arms, and legs. Patches sometimes spread to the neck but rarely to the face.

Patches on the back are often vertical and angled to form a "Christmas tree" or "fir tree" appearance.

The rash usually does not itch, although there may be mild itching. About 25% of people with the condition have itching.¹

The rash usually lasts 6 to 8 weeks, but it can last up to several months.

The rash may take other forms. Rounded bumps (papular rash) may be seen in young children, pregnant women, blacks; and blisters (vesicular rash) may be seen in infants and young children. In some people, the herald patch appears, or two herald patches may appear close together.

Before the herald patch appears, you may feel tired and as though you have a cold. You may have a headache, sore throat, and loss of appetite.

The pityriasis rosea rash is similar to the rash seen in other skin conditions, including ringworm of the skin, tinea, eczema, and psoriasis.

A rash similar to pityriasis rosea is also caused by certain medications, such as antibiotics, and by syphilis.

How is pityriasis rosea diagnosed?

Your health professional will diagnose pityriasis rosea by looking at the rash. Diagnosis can be difficult when only one patch is visible; the condition is often mistaken for ringworm or eczema at this time. Once the rash appears, diagnosis is generally clear.

If the diagnosis is unclear, your health professional may do a potassium hydroxide (KOH) test to make sure it is not a fungus infection. A skin sample may be taken from the infected area and examined under the microscope (biopsy). If the diagnosis is unclear in a sexually active person, a test for syphilis is often done.

How is it treated?

Pityriasis rosea will usually go away in 6 to 8 weeks without treatment. If the rash itches, you may wish to use skin lotions and lubricants to soothe itching. If symptoms are severe, anti-inflammatory medications such as corticosteroids may be used to relieve itching and reduce the rash. Some people may try other medications, such as antifungals, because the rash looks like ringworm. However, because pityriasis rosea is not caused by a fungus, these medications are not effective.

Exposing the rash to sunlight may make it go away more quickly. However, exposing your skin to the sun too long can result in sunburn and increase your risk of skin cancer.

If the rash lasts more than 3 months, contact your health professional.

To relieve itching at home:

Keep the itchy area cool and moist. Apply washcloths soaked in ice water. However, remember that repeated wetting and drying will actually dry your skin. Dry skin can worsen itching caused by a rash.

Avoid taking hot showers or baths. Keep the water as cool as you can tolerate.

Try an oatmeal bath, such as Aveeno Colloidal Oatmeal bath, to help relieve itching. You may also wrap 1 cup of oatmeal in a cotton cloth and boil as you would to cook oatmeal. Use this as a sponge and bathe in cool water without soap.

Try a nonprescription 1% hydrocortisone cream for small itchy areas. Use the cream very sparingly on the face.

A nonprescription antihistamine medication, such as chlorpheniramine maleate (Chlor-Trimeton) or diphenhydramine (Benadryl), may also reduce itching.

Apply a moisturizer or calamine lotion to the skin while it is damp.
Wear cotton or silk clothing. Avoid wearing wool and acrylic fabrics next to your skin.
Use as little soap as possible. Use gentle soaps, such as Basis, Cetaphil, Dove, or Oil of Olay. Avoid deodorant when you have a rash.

Author: Paul Lehnert
Medical Review: Adam Husney, MD - Family Medicine
Last Updated: July 8, 2004



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EXHIBIT 3c

Sales Invoice - L.G.B.
Ray Brock FCI
MAIN

Account No. 2153-039 LGR0002
BROWN, DEMETRIUS
12/06/2004 12:22:12 PM 174547791 39

ENDING BALANCE:

Available Balance is \$05.33

Spending Limit Balance is \$272.45

Account Balance is \$85.23

Qty	Description	Price
1	CHERRY SANDWICH	\$0.30
1	CHOCOLATE MUDRA	\$0.35
1	AFTER SHAVE LC	\$1.35
1	SHOE INSERTS	\$2.75
1	TONE SOAP	\$1.05
1	TUNE SOAP	\$1.05
1	RUD'S BUTTERFINGE	\$1.00
1	BBQ CORN CHIPS	\$0.95
1	RUD'S ORED COOKIE	\$1.00
4	SOPCORN X-BUTTER	\$1.00
1	COLORADO COFFEE	\$5.85
1	TREND N/LEACH	\$1.50
1	EMERY HOARDS	\$0.85
1	OPTI CLEAR DROPS	\$2.20
1	NEW BATH STEP	\$2.20
1	HERITAGE CANDLE	\$2.00
1	HAIR FOOD	\$2.55
1	AA BATTERIES - UN	\$2.20
1	WITE-OUT	\$2.55
1	PER	\$0.40
1	SHAVE LOTION W/AL	\$2.10
1	CUTTER CARD	\$5.85
10	37 CENT SINGLE ST	\$3.70
*3	PHOTO TICKET/FCI	\$3.00

Total \$49.39

Charge 2153-039 \$49.39

Items marked with * are local Use Only

ENDING BALANCE:

Available Balance is \$35.03

Spending Limit Balance is \$272.45

Sales Invoice ---S.B.U.---
 May Brook FDI
 MAIN

Account No. 21534039 RRM3002
 BRENN, DEMETRIUS
 09/20/2005 11:25:46 AM TXMT07723 00

ENDING BALANCES:

Available Balance is \$50.45
 Spending Limit Balance is \$204.40
 Account Balance is \$50.45

Qty	Description	Price
1	READING GLASSES	\$2.10
23	MACKEREL FILLETS	\$2.50
1	PEANUT BUTTER	\$2.00
1	TREND W/BLANCH	\$1.00
1	POTATO BREAD	\$1.45
1	TUNE SOAP	\$1.03
1	TONE SOAP	\$1.05
2	ASSORTED ICE CREAM	\$3.30
1	CLIP-ON SUNGLASS	\$6.00
1	CLIP-IN SUNGLASS	(\$6.00)
1	PEN	\$0.40
1	FCR	\$0.40
1	CLOSE-UP FRESHNET	\$1.75
1	SPEED STICK, SPDR	\$3.10
4	GREETING CARDS	\$2.00
1	AAA - PANASONIC	\$1.95
1	AA - PANASONIC	\$1.25
2	20% GARLIC	\$0.00
2	FISH STEAKS	\$1.00
*4	PHOTO TICKET/ FDI	\$4.00
1	CORTER CARD	\$5.85

Total \$62.65

Charge 21534039 \$62.65

Items marked with * are Local Use Only

ENDING BALANCES:

Available Balance is \$27.00
 Spending Limit Balance is \$221.75
 Account Balance is \$27.00

Signature

*** ALL SALES FINAL ***

EXHIBIT 3d

You Are Stronger Than Nicotine

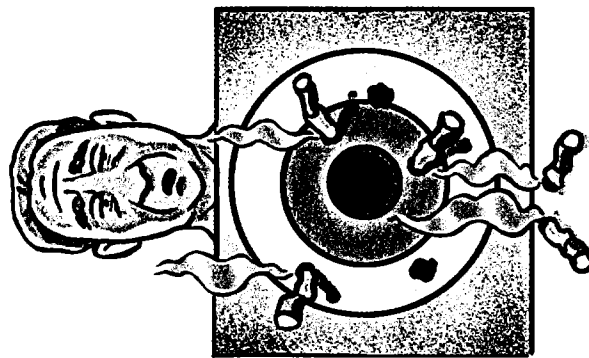
You have a drug addiction. Your drug is nicotine. Though legal, it is just as addictive and harmful as heroin or cocaine. The tobacco industry has made a fortune keeping you hooked. Will tobacco keep controlling you, or will you control it? The choice is yours. Over a million smokers a year quit. So can you. This booklet will show you how.

Your Old Friend Has Betrayed You

Your cigarette has always been a comfort. It has been with you every step of the way for years. But those days are over. Smoking has turned out to be your enemy. It has already made you sick. Unless you quit, it will only make you sicker. And it may well kill you.

Will You Dodge the Bullet Next Time?

You came through this health crisis. Next time you might not. Quitting will mean replacing a lot of old habits with new ones. That will be hard. But not as hard as getting sicker and sicker. You can stop poisoning yourself. You must. Not tomorrow. Not next week. Today.



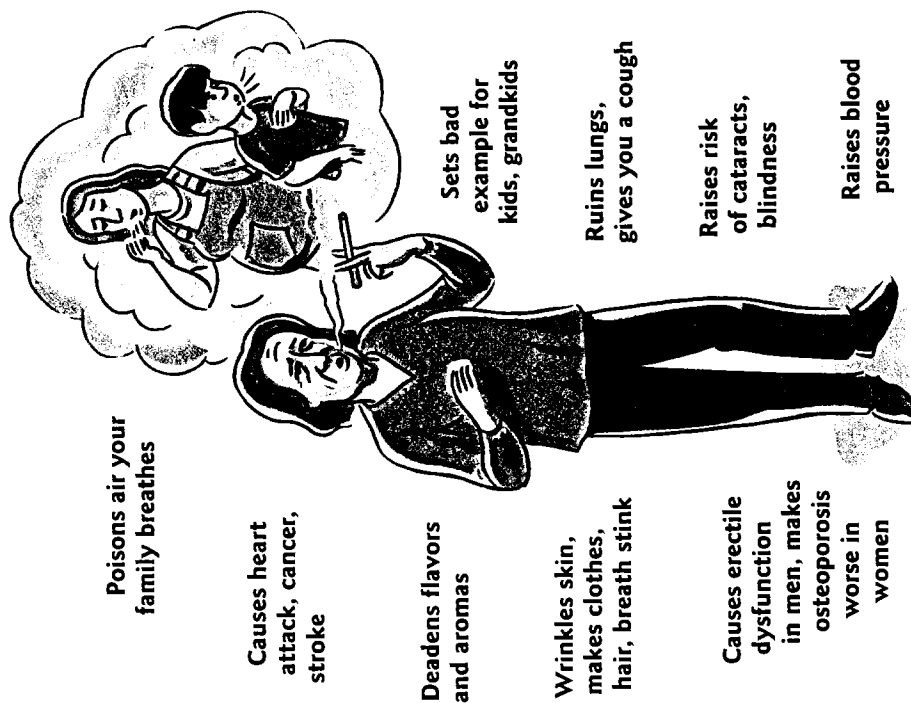
Smoking targets you for heart disease.

This booklet is not intended as a substitute for professional medical care. Only your doctor can diagnose and treat a medical problem.

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What Smoking Does to You

Smoking is slow suicide. It poisons your body. It makes you unattractive. And it robs you of many of life's pleasures. Would you stick with any other activity that did all that?



How Quitting Helps You

As soon as you quit, your body starts to heal. Breathing gets easier. Your stamina and your senses of taste and smell start coming back. Quitting lowers your odds of getting or dying of smoking-related diseases. And it saves your loved ones from breathing your smoke.

Cervical cancer tied to secondhand smoke

by Katrina Woznicki
Womens e-News

NEW YORK (IPS/GIN)—Women exposed to secondhand smoke increase their risk of developing cervical cancer, according to a just-published study from Johns Hopkins Bloomberg School of Public Health.

The study published in the January issue of *Obstetrics and Gynecology* could have critical health implications, as public health advocates work to not only educate women about reducing their risks for cervical cancer, but also lower tobacco use around the globe.

"The evidence is strong," said lead researcher Anthony Alberg, an assistant professor in the Department of Epidemiology. "The findings should encourage smokers to quit and warn non-smokers who live with smokers to decrease their secondhand smoke exposure."

While researchers have long suspected that secondhand smoke raised cervical cancer rates, the study—one of the biggest in the United States—makes the link more definitive. The results are being seen as especially important for women living in developing countries, where smoking is on the

rise and cervical cancer is a leading cause of death.

Prof. Alberg and his team examined the exposures of 51,173 women age 25 and older in Washington County, Md., to household smoking in 1963 and then 1975. The women filled out questionnaires about their exposure to cigarette smoke, who currently or formerly smoked in their households, household member ages, years of education and marital status. Each group was followed 15 years. Researchers then compared women who lived with nonsmokers to women who lived with smokers and monitored who developed cervical cancer. Investigators found that women exposed to passive smoking faced a 2.1-fold increased risk for the disease in 1963. By the 1975 study group, the figure dropped to a 1.4-fold greater risk.

Prof. Alberg said he was "puzzled" by this drop and had "no clear explanation for it." He speculated that one possible reason was that the women in the 1975 group were working outside of the home and may have reduced their household exposure to tobacco. William Au, professor in the Department of Preventive Medicine and Community Health at the University of Texas Medical Branch in Galveston, Texas, said the study,

which was peer-reviewed, proves a conclusive link.

"This is a well-conducted study based on scientific protocol and it has tremendous implications to human health," he said. "We're now seeing how low levels of toxic substances such as secondhand smoke can cause cancer in the human population."

Passive smoking has been known to increase the risks for heart disease and lung cancer in both men and women, and active cigarette smoking has been long established as a major risk factor for cervical cancer. Although scientists have suspected a link between secondhand smoke and cervical cancer, they needed more data to prove it.

One of the more recent studies came from Singapore and was published in the April issue of *Gynecologic Oncology*. Researchers studied 623 women and found their risk of certain abnormal cervical cells that signal the possible onset of cervical cancer increased by 4.6 percent for every cigarette the woman's spouse smoked.

"It's really important people get the message that smoking does much more than we ever thought that it did and that it affects our health in ways we don't even fully know about yet," said Hollis Forster, executive director

of the National Cervical Cancer Coalition, a nonprofit organization in Berkeley, Calif.

Special risks for minorities

Twenty-two percent of the U.S. population smoked in 2003, down from 24 percent in 1998, according to the federal Centers for Disease Control and Prevention (CDC). The American Cancer Society reports that there are more than 10,000 cases of invasive cervical cancer every year in the U.S. and the disease claims 3,900 lives. Black women are most vulnerable to cervical cancer, according to the CDC.

The CDC reports from 1992-2000, only 62.6 percent of Black women survived cervical cancer five years after being diagnosed, compared to a survival rate of 73.3 percent among White women. The federal agency also reports higher Pap smear testing, the gold standard of screening for cervical cancer, among White women.

While smoking rates have been dropping steadily in this country and cervical cancer rates have followed suit thanks to detection with Pap smear tests, the rates for both remain a serious public health threat elsewhere around the world.

In developing nations, cervical cancer is the second-leading cause of cancer deaths among women, after lung cancer with 80 percent of

the 500,000 new cases every year occurring in Latin America, Africa, and Southeast Asia.

Although easily treated if detected, cervical cancer remains a top public health threat because of human papillomavirus (HPV), a sexually transmitted infection that causes the disease. Prof. Alberg said he suspects tobacco exposure may exacerbate HPV infection. "It is possible that cigarette smoke acts in concert with HPV to promote progression to cancer," he said.

Women, however, should not think being around cigarette smoke will directly result in HPV infection. While smoking is unrelated to the acquisition of HPV infection, it is "related to immunity, which is important in the progression" of cervical tumors, said Janet Daling, an investigator at the Fred Hutchinson Cancer Research Center in Seattle.

The rising number of public smoking bans may make it easier for women.

"The banning of smoking in public places is just the beginning," said Prof. Au. "First, it's the ban. Second, it's education. We don't want people to quit smoking in public places and then just smoke in the home. That puts family members and children at risk."

USA TODAY · WEDNESDAY, MARCH 9, 2005 · 7

Firestorm could be brewing over secondhand smoke

Breast cancer connection is complicated

By John Ritter
USA TODAY

SAN FRANCISCO — Cancer scientists are split over whether smoking causes breast cancer, but they agree on one thing: The debate is far more complex than linking smoking to lung cancer or heart disease.

The U.S. surgeon general says tobacco smoke — whether secondhand or inhaled by smokers — can cause both those killers. Only the tobacco industry disputes the evidence. But breast cancer, a disease that strikes 270,000 U.S. women a year, is another matter. Though a California government report is the first to affirm secondhand smoke as a cause, it's far from the last word.

Chemicals in cigarette smoke cause breast cancer in rats; the chemicals are found in human breast tissue. Recent studies of groups of women show a breast cancer-smoking link. But science has been slow — too slow, breast cancer advocates say — to indict tobacco.

"If we spend this much time looking at each chemical out there that could cause breast cancer or other cancers, we'll all be dead before the analysis is completed," says Nancy Evans, a health science consultant with the Breast Cancer Fund, a national group that focuses on prevention.

Scientific caution is partly a result of Big Tobacco's clout. "The tobacco industry is so wealthy and powerful that you want what you say to be incontrovertible," says Michael Thun, who heads the American Cancer Society's epidemiological research.

The industry disputed the California findings in public comments included in the report. Three tobacco companies declined interview requests.



Taking action since 1966

California's Air Resources Board has been a national leader in curtailing pollution, particularly from vehicles:

► **1966:** A pollution-control board that was the ARB's forerunner was the first agency in the nation to set tailpipe-emissions standards for cars. By the time the federal Clean Air Act passed, creating the Environmental Protection Agency four years later, more than 1 million California cars had early pollution-control devices.

► **1970:** The ARB required automakers to meet the first standards to control smog-forming hydrocarbon and nitrogen oxide emissions.

► **1976:** With invention of the catalytic converter, a technology to cut tailpipe emissions, the ARB made California the first state to phase out leaded gasoline, a requirement for converters to work.

► **1978:** Cleaner gasoline allowed the ARB to toughen emissions standards to the point that automakers had to equip cars with catalytic converters, first for cars sold in California, later nationwide.

► **1990:** The ARB made California the first state to require an oxygen additive in gasoline to cut carbon monoxide emissions. Within a year after the fuel became available, CO emissions had dropped by 10% statewide.

But a bigger reason is uncertainty about the data. California scientists who concluded that secondhand smoke causes breast cancer and whose report is likely to be approved next week by a review panel were persuaded by "the weight of evidence."

Much of that was newer, better studies, says Melanie Marty, the section chief with the Office of Environmental Health Hazard Assessment who supervised the report. "What you want is multiple studies that show an effect," she says. "As time has gone by, more and more have shown an effect."

Marty's team looked at older studies that didn't ask enough questions to figure out who was really exposed (to secondhand smoke) and who wasn't. But in six recent studies that were careful to take women who'd been exposed out of control groups, the risks went up, she says.

The scientists also saw a breast cancer link to active smoking in the newer studies, though not as distinct as with secondhand smoke. That was important, Marty says, because the scientific consensus has been that active smoking doesn't put women at risk. The California scientists didn't calculate the risk for active smoking.

The lower risk seen for active smoking, which bathes tissue with more carcinogens than secondhand smoke, is probably because of estrogen, Marty says. The female hormone raises breast cancer risk, but a leading theory is that big doses of inhaled smoke blunt its ability to fuel tumor growth, while smaller secondhand doses don't.

Health risks to children

Women exposed to secondhand smoke have a 26% to 90% higher risk of breast cancer, the report says. That broad range is due to wide disparity in exposure — a woman married to a three-pack-a-day smoker for 30 years vs. a woman exposed for a short time. The greater the exposure, the earlier the age of exposure — particularly before puberty and a first pregnancy — the higher the risks, the report said.

The California scientists gave more weight to toxicology — whether chemicals in smoke cause breast cancer in



By Chris Purlong, Getty Images

The ban bandwagon

States that enacted smoking bans for workplaces, bars or restaurants, or for all three:

- | | |
|----------------|-----------------|
| ► California | ► Connecticut |
| ► Utah | ► Maine |
| ► South Dakota | ► Idaho |
| ► Delaware | ► Massachusetts |
| ► Florida | ► Rhode Island |
| ► New York | ► Vermont |

Source: USA TODAY research;
American Nonsmokers' Rights Foundation

lab animals — than the surgeon general or the International Agency for Research on Cancer. Toxicology provides "biological plausibility," Marty says. "If studies don't bring it forward as a reason why all these things make sense, they're missing a piece of the puzzle."

Whether the California breast cancer findings — and newer studies they're partly based on — influence a surgeon general's report on secondhand smoke due this year is uncertain.

"I'd be very surprised to see that

change," says Barbara Brenner, executive director of Breast Cancer Action. "There's more caution in the scientific community than is necessary in the interest of the public's health. What science understands as proof is almost an ever-retreating goal."

The National Cancer Institute published the Air Resources Board's widely praised 1997 secondhand smoke report. It found evidence of a breast cancer link inconclusive. "We need to take this new report seriously, look at it closely," says Deborah Winn, chief of an NCI epidemiology branch.

Even if the review panel approves the new report, the board may not. It took no action and forwarded the 1997 report to the state health department, deciding it had no authority to regulate indoor pollution.

But the new report has measurements on outdoor secondhand smoke from several California locations. An amusement park had the highest nicotine concentrations. Lawyers are researching whether the board can ban smoking in vehicles carrying children,

spokesman Jerry Martin says.

A bill to do that failed narrowly last year in the California Legislature after heavy tobacco industry lobbying.

The board might find a rationale now. In 1999, the Legislature expanded its scope, ordering it to assess pollutants' health risks to children because of their greater susceptibility. Other than private homes and a few workplace exceptions, vehicles are the only major category of enclosed space where smoking is permitted in California.

"It's fair to say there's some interest in going further than they did in 1997," Martin says. The 1967 law that created the board says it must act to protect public health even without "undisputed scientific evidence."

No states prohibit smoking in vehicles. "That would be significant," says Brenner of Breast Cancer Action. "The more we restrain where people smoke publicly, the more likely they are to smoke in the places where they can — homes and cars."

► Study finds breast cancer link, 1A

► **1994:** The ARB required the advanced diagnostic sensing systems found on all new cars today, including sensors to detect emissions from a vehicle's air conditioning.

► **1998:** The ARB classified increasingly large SUVs, minivans and light pickups as autos to prevent automakers from taking advantage of the state's more lenient truck-emissions standards.

► **2004:** A state law permitted the ARB to write the nation's first regulations requiring automakers to cut greenhouse-gas emissions from vehicles, by 22% in 2012 and by 30% in 2016.

Reporting by John Ritter

Secondhand smoke causes breast cancer, study says

tional scientific thinking be- cause most studies, until recently, had found no connection between female smokers and breast cancer.

But California scientists based their conclusion on recent human studies that they determined had more careful assessments of long-term exposure to tobacco smoke. The report also gave more weight to toxicology evidence from animal studies than previous studies by the surgeon general and others. It's well-documented that chemicals from cigarettes cause breast cancer in lab animals.

Overall, women exposed to secondhand smoke have up to a 90% greater risk of breast cancer, the report says. It says secondhand smoke kills as many as 73,400 a year in the USA. The report did not estimate

the number of additional new breast cancer cases annually, and scientists did not calculate risk levels based on doses of secondhand smoke. Tobacco companies, in public comments filed with the board, say the report gives little weight to studies that found no breast cancer connection. A new surgeon general's report on secondhand smoke is expected this year. "The topic is still under review," says the report's senior scientific editor, Jonathan Samet, an epidemiology professor at Johns Hopkins University.

"It's controversial," Samet says. "Concluding that passive smoke causes breast cancer has potentially powerful implications for tobacco control and breast cancer control. So there has been tension over it."

Cancer risk
A woman's risk of developing breast cancer increases with age:
30 to 40: 1 in 227
40 to 50: 1 in 67
50 to 60: 1 in 36
60 to 70: 1 in 26
Source: National Cancer Institute

Breast cancer link
■ Debate not over, 7D

onhand smoke and more than 1,000 studies of health effects from secondhand smoke.

The conclusion that secondhand smoke causes breast cancer, particularly in younger women, challenges conven-

the Air Resources Board — whose early efforts to regulate auto emissions were a model for the rest of the country — could fuel workplace smoking bans in more states. And it is likely to refocus the scientific debate over the link between smoking and breast cancer.

"I have to say without reservation it will stimulate continued and accelerated scientific evaluation of the smoking and breast cancer issue," says Jerry Pechacek, associate director for science in the CDC's office on smoking and health.

A scientific review panel is expected to approve the report as early as Monday and forward it to the Air Resources Board, which has broad state authority to regulate air pollution. The 1,200-page report analyzes new data on the extent of Californians' exposure to sec-

ondhand smoke and more than 1,000 studies of health effects from secondhand smoke. The conclusion that secondhand smoke causes breast cancer, particularly in younger women, challenges conven-

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Calif. finding could have wide effect
By John Ritzer
USA TODAY

SAN FRANCISCO — Scientists at an influential California agency have concluded that secondhand smoke causes breast cancer, a finding that could have broad impact on cancer research and lead to even tougher anti-smoking regulations. Although recent studies have linked smoking to breast cancer, no major public health group, including the American Cancer Society, the Centers for Disease Control and Prevention and the National Cancer Institute, has declared it a cause of the disease that kills 40,000 women each year in the USA. The finding by scientists for

the Air Resources Board — whose early efforts to regulate auto emissions were a model for the rest of the country — could fuel workplace smoking bans in more states. And it is likely to refocus the scientific debate over the link between smoking and breast cancer.

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Top cigarette producers globally

Countries that produced the most cigarettes in 2003 (in billions of cigarettes):



10 Crossword
Editorial/Opinion
Lotteries
Marketplace Today
State-by-state
Market scoreboard
USA TODAY, a division of Gannett Co., Inc.
Subscriptions, customer service 1-800-USA-0001
www.ustoday.com

African-American Male Smokers Are More at Risk of Getting Cancer

By WILLIAM M. BULKELEY

African-American male smokers are much more likely to get lung cancer than are white or Latino men who smoke, researchers reported in a study in the New England Journal of Medicine to be published today.

The study, which found that native Hawaiian smokers had high lung-cancer rates while Japanese Americans had low rates, didn't attempt to find reasons for the differences. An accompanying editorial said it isn't clear the information has public health value, since "eliminating smoking would largely reduce and equalize the rates of lung cancer" across all groups.

Nevertheless, according to the editorial, the study emphasized that ethnic information may be useful in diagnosing or treating some illnesses. Doctors and researchers have become increasingly aware that many diseases have different impacts in different racial and ethnic groups. Last year, the Food and Drug Administration, for the first time, approved a drug designed for use by one racial group when it approved NitroMed Inc.'s BiDil to combat heart disease in African-Americans.

African-American groups, including Congress's Black Caucus and various physicians associations, have been pressing for more studies of racial differences in disease incidence and treatment as well as whether drug effectiveness differs by racial groups.

The lung-cancer study was conducted by researchers at the University of Southern California and the University of Hawaii, using data from the Multiethnic Cohort Study, a database of 215,000 individuals who volunteered their ethnic identities for medical research purposes. For the cancer study, researchers followed 183,000 people in an eight-year period starting in 1993. Of the total, 1,979 got lung cancer.

According to the study, African-American men who smoked had 264 cases of lung-cancer per 100,000 individuals, compared to 158 cases in white men and 79 cases in Latino men. Native Hawaiian men had 264 cases and

Japanese American men had 121 cases. Other ethnic groups weren't included in the study. Women had lower incidences of lung cancer, but ethnic differences generally followed the same pattern. The differences were most pronounced among people smoking 20 or fewer cigarettes a day. The researchers said ethnic and racial differences largely disappeared among heavy smokers who had 30 or more cigarettes a day.

Christopher Haiman, an assistant professor in the Keck School of Medicine at the University of Southern California, who led the study, said the effects he found were more pronounced than smaller previous studies. He said "the next step is to understand more about the mechanism to try to explain the differences." He said both genetic

Ethnic and racial differences largely disappeared among heavy smokers.

and behavior differences could affect the way smoking causes lung cancer. For example, he said, there could be group differences in "smoking behavior such as depth or frequency of inhalation." There also could be genetic differences that affect the way people metabolize the smoke.

Neil Risch, director of the Institute for Human Genetics at University of California at San Francisco, who wrote the editorial accompanying the study, said the lung cancer results "provide an example of how ethnicity can interact with environmental factors in terms of the risk of disease." He said other studies have found that Asians and Latinos have lower rates of most cancer except for stomach cancer. He added that other diseases are likely to have similar variations. "There's probably a mix of genetic and environmental factors," he said.

WED, 12/21/05 WSS-SC.D

Using X-Rays to Find Lung Cancer

By JENNIFER CORBETT DOOREN

Dow Jones Newswires

WASHINGTON—Screening for lung cancer with chest X-rays can detect lung cancer at an early stage, but it is too soon to say whether the tool would prevent lung-cancer deaths, according to results of a government-funded study looking at cancer-screening methods.

Currently, most lung cancer is diagnosed in advanced stages and most patients die within two years of being diagnosed. There is no routine method at present for detecting lung cancer, the leading cancer killer of both men and women, at an early stage, unlike cancers of the breast, prostate and colon.

Researchers, led by the National Cancer Institute, part of the National Institutes of Health, wanted to know if routine chest X-rays could pick up the lung cancer sooner. The study will be published in today's edition of the *Journal of the National Cancer Institute*.

From 1993 to 2001, researchers enrolled 154,942 men and women who were aged 55 to 74, including current smokers, former smokers and those who had never smoked.

The participants are enrolled as part of a larger prostate, lung, colorectal and ovarian cancer screening trial that is looking at cancer-screening methods. About 67,000 men and women in the lung-cancer portion of the study received an initial chest X-ray.

The results showed that X-rays detected 126 cases of lung cancer, almost half of which were at stage one, considered the earliest stage.

However, Christine Berg, who oversees the PLCO trial, said the study showed the chest X-rays produced a high false-positive rate. The X-rays detected spots or tissues on the lungs of almost 6,000 patients requiring them to undergo additional testing. The 126 cases of lung cancer were confirmed after additional testing.

WSS 8/16/05

Even Among People Who Never Smoked, Diagnoses of Lung Cancer Are Rising

LUNG CANCER HAS always been viewed as a disease of smokers, or even ex-smokers. But now, doctors say the deadly cancer may be showing up more often in patients who *never* smoked at all.

The disease is still a far bigger worry for smokers and former smokers, but there's good reason to take a closer look at so-called never-smokers with lung cancer. Recently, researchers discovered that female never-smokers are far more likely to respond to the new targeted therapies for lung cancer—*Iressa* and *Tarceva*.

Understanding the genetic differences between lung cancers in never-smokers and those who have smoked could ultimately lead to better treatments for both groups, notes Bruce E. Johnson, director of thoracic oncology at Dana-Farber Cancer Institute. Dana-Farber is conducting a study of the targeted drug *Tarceva* as a first-line treatment in female lung-cancer patients who never smoked.

The fact that never-smokers are also at risk for lung cancer was highlighted last week when Dana Reeve, the widow of actor Christopher Reeve, announced she was undergoing treatment for lung cancer. Ms. Reeve never smoked.

The hard data on never-smokers are sketchy. But doctors who treat lung-cancer patients say they believe the number of never-smokers with the disease is growing. "There's no question in my clinic, week to week, month to month, there are more never-smokers," says Scott J. Swanson, chief

of thoracic surgery at Mount Sinai School of Medicine in New York.

Right now, doctors say about 15% of patients diagnosed with lung cancer each year fall into the category of never-smokers—that amounts to about 28,500 people.

Nobody really knows why lung cancer appears to be increasing in never-smokers. One theory is that baby boomers may have been exposed to large amounts of second-hand smoke by parents and grandparents who smoked at home. But doctors may not think of lung-cancer risk when treating patients who never smoked, and may attribute symptoms like chronic cough to other causes. Lung-cancer experts say doctors and nurses need to be more vigilant in taking a patient's personal smoke-related history, including whether they come from families with smokers.

Many cases of lung cancer in never-smokers are detected by accident. That was the case for Cynthia Kneibert, a 65-year-old psychotherapist from Sedalia, Mo., who underwent a routine chest X-ray to prepare for hip-replacement surgery. After finding a mass in her lung, doctors removed part of her lung and Ms. Kneibert is now undergoing chemotherapy.

Ms. Kneibert, who exercised regularly and considered herself the picture of health, was stunned that she had lung cancer, sending her and her husband on a search for what might have caused it. Except for a few experimental puffs as a teenager, Ms. Kneibert never smoked. But her father did. "I remember riding in cars as a little child with the windows up and the car filled with smoke," she says.

Other Factors

Some risks for lung cancer in people who never smoked:

RISK	EXPOSURE
Second-hand smoke	30% higher risk in nonsmokers married to smokers
Radon	Residential exposure increases risk between 11% and 21%
Workplace	Asbestos, diesel exhaust and other chemicals pose risk
Family history	Chromosomal abnormality increases risk
Being female	Hormonal difference may put women at higher risk

Source: American Cancer Society

Also, Ms. Kneibert lives in an area known to have high levels of radon. Radon is a naturally occurring radioactive, invisible, odorless gas. It can accumulate in enclosed areas, such as homes and underground mines, and it's known to increase risk for lung cancer.

Ms. Kneibert learned her basement had a level of seven picocuries of radon per liter of air. Research has shown that lung-cancer risk increases at residential concentrations of about three picocuries. But Ms. Kneibert spent little time in her basement, so it isn't clear whether she really had much radon exposure.

Most never-smoking patients will never know for sure whether the cancer was caused by a combination of passive smoke, radon or some other environmental exposure—or whether, for them, lung cancer was genetically determined, says Derek Raghavan, chairman of Cleveland Clinic's Taussig Cancer Center. Family history can put

you at higher risk, but scientists are also discovering that some people carry certain genetic mutations that may play a role.

Doctors do know that lung cancers in patients who never smoked are genetically different from those in smokers and former smokers. Never-smokers' tumors are more likely to carry the genetic signature that targeted therapies like *Iressa* are designed to attack.

Women never-smokers may also be at higher risk than men never-smokers. Part of the reason may simply be that there is a greater pool of women who have never smoked than men. But recent research has also shown that the mechanism by which the body repairs cell damage doesn't seem to work as well in women as in men, perhaps making them more vulnerable to cell damage from environmental factors. In addition, researchers are studying whether hormonal factors play a role in lung cancer.

Some studies support the idea that using special CT scans to screen smokers and former smokers can lower the death rate from lung cancer, but even less is known about how or whether to screen people who have never smoked. "Perhaps we should do a one-time screening of nonsmoking women at the age of 40—that's a question we need to study," says Claudia Henschke, radiology professor at New York-Presbyterian/Weill Cornell Medical Center.

Patients, regardless of smoking history, should always talk to a doctor about a persistent or unusual cough. And make sure your doctor knows if you have a family history of lung cancer, or you have been exposed to high levels of passive smoke, asbestos or other environmental risks. Finally, check out www.epa.gov/radon to learn more about radon and whether your home should be tested.

Email me at healthjournal@wsj.com; read my responses in Health Mailbox inside this section.

WEDNESDAY, FEBRUARY 1, 2006 D5

Heart Disease Evades Detection In Many Women Despite Signs

Associated Press

WASHINGTON—Conventional tests won't uncover heart disease in as many as three million U.S. women—because instead of the usual, bulky clogs in main arteries, these women have hard-to-spot buildups in smaller blood vessels, researchers said. These are the women who come to the doctor complaining of chest pain or shortness of breath but sometimes are sent away undiagnosed, not knowing they are actually at high risk for heart attacks in the next few years.

"The No. 1 message for women is, 'Pay attention to your symptoms,'" said Dr. George Sopko, a heart specialist at the National Institutes of Health, which sponsored the research. "If you don't have visible blockages, that doesn't mean you're not at risk."

Heart disease is the nation's leading killer of both men and women. In fact, slightly more women than men die from cardiovascular diseases each year—more than 480,000 of them, according to the American Heart Association.

Scientists are struggling to understand gender disparities: Women are less likely to receive aggressive treatment for heart

disease than men, are less likely to survive heart surgery and respond differently to different risk factors and therapies. They frequently have different heart-attack symptoms than men, such as fatigue instead of chest pain radiating down the arm.

Even the test considered best at diagnosing heart disease—angiography, which lets doctors watch as blood flows through key arteries—is less accurate for women than for men.

Reviewing clues from some recent research, the NIH's National Heart, Lung and Blood Institute highlighted why many women are at risk after a misleadingly "clear" angiogram. In a study called the Women's Ischemia Syndrome Evaluation, researchers have found that about two-thirds of women with chest pain pass an angiogram. But about half of them turn out to have a condition named "coronary microvascular syndrome," where plaque evenly coats very small arteries instead of forming more obvious obstructions in larger ones.

Angiograms can't see these tiny arteries, Dr. Sopko explained. The narrowed small arteries mean less oxygen flow to the heart, explaining the women's chest pain.

EXHIBIT 3e



Secondhand Smoke

Today most people have heard the statement "secondhand smoke kills." But in society's increasing awareness of the health dangers of tobacco, of the lies manufactured by the tobacco industry, and of an emerging body of law supporting smokefree policies, it is not enough to simply state "secondhand smoke kills" without knowing how secondhand smoke is a health danger, whom it affects, where exposure is the most serious, and what can be done to stop it.

Throughout the years, the science of secondhand smoke has driven the secondhand smoke policy engine from separate smoking and nonsmoking sections to separately ventilated smoking rooms to 100% smokefree environments. We now know that 53,800 people die every year from secondhand smoke exposure. This number is based on the midpoint numbers for heart disease deaths (48,500), lung cancer deaths (3,000), and SIDS deaths (2,300) as calculated in the 1997 California EPA Report on Secondhand Smoke. And children are at significant risk to many acute and chronic diseases as a result of secondhand smoke exposure.

Since the 1986 Surgeon General's Report titled *The Health Consequences of Involuntary Smoking* stated that secondhand smoke can cause disease in nonsmokers, hundreds of studies have concluded not only this, but that exposure to secondhand smoke can result in death. Over the past 20 years, scientific research has become even more clear, resulting now in the ability to pinpoint the effects of secondhand smoke not just on particular organs, but on various ethnicities, types of workers, and socioeconomic classifications.

As the body of scientific evidence becomes larger and more precise, it is now possible to prove that smokefree policies not only work to protect nonsmokers from the death and disease caused by exposure to secondhand smoke, but also have an immediate effect on the public's health. On a larger scale, a study has confirmed that restaurants and bars located in smokefree cities have 82% less indoor air pollution than restaurants and bars in cities that do not have smokefree protection. Because of the mountain of evidence from these peer-reviewed, scientific studies, the Centers for Disease Control recently issued a warning for anyone at risk for heart disease to avoid smoke-filled indoor environments completely.

Secondhand smoke kills. Knowing the science behind it, as well as how smokefree policies protect the public from secondhand smoke, will help cement this in the minds of the public.

Americans for Nonsmokers' Rights
American Nonsmokers' Rights Foundation
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TO

Medical
& Other News

To print: Select File and then Print from your browser's menu

Title: **Research Shows Second-hand Smoke and High Cholesterol Damage Heart**

URL: <http://www.pslgroup.com/dg/6FA2.htm>

Doctor's Guide

March 26, 1996

SAN FRANCISCO March 26, 1996 -- The heart attacks that often kill non-smokers who are chronically exposed to second-hand tobacco smoke may result from a long disease process caused by smoke and high cholesterol acting together to damage cells lining artery walls, new experiments by UC San Francisco cardiologists suggest.

Damage done to these cells by smoke and fat may be offset somewhat by massive doses of a precursor of a molecule used by cells to send signals, or by vitamin E, the researchers found. They also determined that the damage may be made worse by the sex hormone testosterone. The researchers presented their preliminary findings today (March 25) at the annual meeting of the American College of Cardiology in Orlando, Fla.

Epidemiological studies comparing deaths among populations with differing lifestyles indicate that each year 50,000 or more non-smokers die from heart attacks attributable to second-hand smoke. Heart disease greatly outstrips lung cancer or other cancers as the most prominent, deadly health risk faced by non-smokers thus exposed. The new UCSF findings shed light on the biological reasons why second-hand smoke is harmful to heart health.

"Our experiments demonstrate that smoking and diet can affect the health of cells that are vital in preventing the clogging and hardening of arteries," says Stuart Hutchison, MD, a clinical instructor in cardiology at UCSF who presented some of the group's findings.

The UCSF group focuses on gaining a better understanding of how diet, smoking and hormones affect a microscopically thin layer of cells, called endothelial cells, which lines the inner surface of blood vessels.

By preventing blood-borne molecules from attaching to blood vessel walls, healthy endothelial cells prevent the build-up of plaque, Hutchison explains. The cells also release and respond to chemicals that cause blood vessels to widen and narrow as the physiological situation demands.

If these cells are lost or damaged, blood vessels are more likely to accumulate plaque, and the blood vessels become less capable of adjusting their diameters to meet the body's oxygen needs.

Plaque accumulation and its possible role in heart disease has been appreciated for centuries, Hutchison points out. In comparison, the loss of the ability to regulate blood vessel diameter has been known for

less than two decades, and research into its contributions to heart disease has intensified and become more fruitful in recent years, according to Hutchison.

The researchers used rabbits to perform controlled experiments that would be difficult or impossible to conduct in humans. On a small scale, the heart and blood vessel anatomy of rabbits mimics that of humans, and the circulatory systems of the two mammals are believed to respond similarly to life's insults.

The UCSF scientists exposed male rabbits to smoke and a high cholesterol diet for ten weeks. To conduct detailed investigations of endothelial cell performance and of affects on blood vessels, the researchers studied the responses of living slices of aorta bathed in a saline solution similar to blood, bubbling oxygen into solution to keep cells alive.

The UCSF group measured plaque build-up, as well as the ability of aortic slices from treated animals to contract and relax in response to pharmacological substances. Both measures of heart disease were adversely affected when rabbits were fed a high cholesterol diet and exposed to tobacco smoke.

The purpose of using L-arginine in the studies, Hutchison says, is that it is a building block used by endothelial cells to make nitric oxide, a signaling molecule in the cells. The cells produce nitric oxide to control the diameter of blood vessel cells.

The researchers found that nitric oxide production dropped in endothelial cells exposed to smoke. Supplementing the diet with L-arginine helped the aortic slices to remain flexible. This suggests that L-arginine leads to increased production of nitric oxide, causing the vessel to relax, Hutchison said.

The UCSF team also bathed some of the aortic slices from the rabbits in a solution containing physiologic concentrations of various sex hormones, including testosterone and estrogen. "In these male rabbits, estrogen did not improve the impaired response, and testosterone actually worsened it," Hutchison says. "This suggests that in male animals testosterone may participate in some aspects of atherosclerosis.

"This work raises questions about a possible role of sex hormones as protective or contributing factors in heart disease," Hutchison adds. "With more women trying to weigh the risks and benefits of post-menopausal estrogen therapy, and with many adolescent boys and men abusing male sex hormones in an effort to better compete athletically, understanding these connections becomes increasingly important."

In comparison to men, women are believed to be somewhat protected from heart disease by estrogen until production of the hormone drops at menopause.

The researchers used vitamin E, an anti-oxidant, to investigate the possible role of oxidation in damaging blood vessels and endothelial cells. They wanted to know if oxidation is implicated in causing a blood vessel to become less flexible.

Vitamin E restored the ability of blood vessels to relax in response to pharmacological agents in the smoke-exposed, high cholesterol rabbits, but research on aortic slices in this group has thus far been inconclusive, Hutchison says.

"These preliminary studies are helpful in understanding how cellular changes contribute to heart disease," Hutchison says. "However, we used massive doses of supplements to help us examine very specific aspects of blood vessel behavior and our results do not lead us to recommend dietary supplements for human heart disease at this time.

"Ultimately," Hutchison adds, "We hope similar studies will help us learn how to better detect and prevent these harmful biological events before a heart attack occurs."

Other UCSF Division of Cardiology physicians who participated in the research presented today include William Parmley, MD, professor and chief; Kanu Chatterjee, MD, professor; Stanton Glanz, MD, professor; Khrishna Sudhir, MD, assistant professor; Tony Chou, MD, assistant professor; and Prakash Deedwania, MD, a clinical professor of medicine at UCSF who is also the chief of cardiology at the Veterans Administration Hospital in Fresno.

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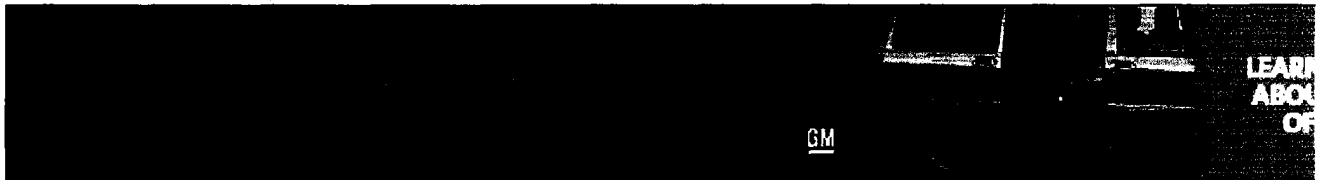
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Lung Cancer Can Strike Nonsmokers

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MY Y! Yahoo! Health

August 10, 2005 08:41:26 PM PST

By Amanda Gardner

HealthDay Reporter

WEDNESDAY, Aug. 10 (HealthDay News) – The news that Dana Reeve, the widow of "Superman" actor Christopher Reeve, has lung cancer proves the disease can – and does – strike anyone.

She is only 44 years old. And never smoked.

Her revelation Tuesday followed by two days the lung-cancer death of ABC news anchor Peter Jennings at age 68.

Jennings was both a smoker and an ex-smoker: He quit for 20 years but admitted starting again after the Sept. 11 terrorist attacks.

While Jennings' ordeal was probably due to cigarettes, Reeve's struggle is less understandable.

Some 85 percent to 90 percent of lung cancer cases occur in smokers, said Dr. Ruth Oratz, an associate professor of medicine at New York University School of Medicine and an advisor to the American Lung Association.

Still, that leaves some 20,000 to 25,000 people who will be diagnosed with lung cancer this year in the United States who never smoked, Oratz added.

Lung cancer's overall toll is huge – it's the most deadly cancer, killing more Americans than any other form of the disease, including ovarian and breast cancer combined. According to the American Cancer Society, there will be about 172,000 cases of lung cancer in the United States this year – 93,010 among men and 79,560 among women. And about 160,000 people will die of the disease.

people will die of the disease — 90,490 men and 73,020 women.

But the face of lung cancer is changing and, sadly, Dana Reeve may represent that newer face.

"What we've been seeing in the last 10 to 15 years is a gradual change in the standard lung cancer patient," said Herman, a thoracic surgeon and lung cancer specialist who is chief of minimally invasive thoracic surgery at Long College Hospital in New York City.

For one thing, Reeve is a woman.

"Traditionally, in the past, lung cancer was primarily a male disease where the ratio was maybe 75 to 80 percent for the rest females," Herman said.

Now that's changing. "Lung cancer is increasing in incidence in women smokers and nonsmokers," Oratz concurs. "I don't know why that's happening in nonsmokers."

And lung cancer is striking younger people, Herman said.

These demographic shifts seem related to biological shifts.

In the past, lung cancers tended to be predominantly of the squamous cell subtype. This form of lung cancer was closely associated with smoking, Herman said.

In the last decade or so, the predominant cell type has become adenocarcinoma, which is less tied to smoking.

"Clearly, adenocarcinomas are much more likely to occur in smokers but a much larger percentage of people with adenocarcinoma may not be smokers," Herman said. "The fact is that adenocarcinoma is increasing in frequency. As squamous means you're going to get more nonsmokers with the disease."

Women have a slightly higher propensity to get this type of lung cancer. And, adenocarcinoma also tends to hit at a younger age because it's not so dependent on the build-up of years of irritation caused by smoking, he added.

And the younger the patient, the more aggressive the tumor, it seems.

"If lung cancer is discovered at a younger age, it seems to be a more aggressive type of cancer," said Dr. Paul Kvale, president of the American College of Chest Physicians and a pulmonologist at Henry Ford Hospital in Detroit. "Likewise with family history, the two of those together seem to be associated with a more aggressive type of lung cancer."

But there are a number of other possible risk factors.

Passive smoking is a big one. "We think secondhand smoke is a very important risk factor, particularly if you live in a household where others smoke," Kvale said.

"Women who live with a partner who smokes or who work in a workplace that is smoky are at a major increased risk," Kvale said. "For some reason that is not well understood, women are at a higher risk than men for lung cancer given the exposure."

Exposure to asbestos is another risk factor, but one that is more pertinent to men because it is an occupational risk rather than a risk factor.

Radon is another possible environmental risk factor, although quantifying how much of an additional risk has proven difficult, Kvale said. A radioactive gas, radon comes from the natural decay of uranium that is found in nearly all soils. It is

many homes and is known to cause lung cancer, according to U.S. health officials.

And a number of individuals who have received radiation treatment for other diseases in the past may be at increased lung cancer, Oratz said.

Genetics also play a small role in the development of lung cancer. "There's not a strong genetic linkage but if you family where other family members have lung cancer you will have a slight increased risk," Oratz said.

Or it could be a combination of factors. "When you couple several of those things, for example, secondhand-smoke and family history, then you've really got several things that are increasing your own risk," she said.

Then there's the unknown.

"Undoubtedly there are other issues that we haven't yet discovered," Kvale said.

More information

Visit the [American Lung Association](#) for more on lung cancer.

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Health Effects of Exposure to Secondhand Smoke

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What is Secondhand Smoke?

Secondhand smoke is a mixture of the smoke given off by the burning end of a cigarette, pipe, or cigar, and the smoke exhaled by smokers. Secondhand smoke is also called environmental tobacco smoke (ETS) and exposure to secondhand smoke is sometimes called involuntary or passive smoking. Secondhand smoke contains more than 4,000 substances, more than 40 of which are known to cause cancer in humans or animals.

- EPA has concluded that exposure to secondhand smoke can cause **lung cancer** in adults who do not smoke. EPA estimates that exposure to secondhand smoke causes approximately 3,000 lung cancer deaths per year in nonsmokers.
- Exposure to secondhand smoke has also been shown in a number of studies to increase the risk of heart disease.

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Did You Know?

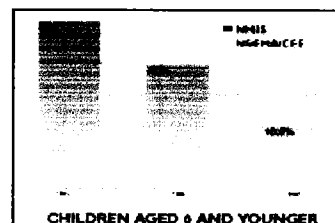
11% of children aged 6 years and under are exposed to ETS in their homes on a regular basis (4 or more days per week).

The National Survey on Environmental Management of Asthma and Children's Exposure to Environmental Tobacco Smoke.

Serious Health Risks to Children

Children are particularly vulnerable to the effects of secondhand smoke because they are still developing physically, have higher breathing rates than adults, and have little control over their indoor environments. Children exposed to high doses of secondhand smoke, such as those whose mothers smoke, run the greatest relative risk of experiencing damaging health effects.

- Exposure to secondhand smoke can cause **asthma** in children who have not previously exhibited symptoms.
- Exposure to secondhand smoke increases the risk for **Sudden Infant Death Syndrome**.
- Infants and children younger than 6 who are



regularly exposed to secondhand smoke are at increased risk of lower respiratory track infections, such as **pneumonia and bronchitis**.

- Children who regularly breathe secondhand smoke are at increased risk for **middle ear infections**.

Health Risks to Children with Asthma

- Asthma is the most common chronic childhood disease affecting 1 in 13 school aged children on average.
- Exposure to secondhand smoke can cause new cases of asthma in children who have not previously shown symptoms.
- Exposure to secondhand smoke can trigger asthma attacks and make asthma symptoms more severe.

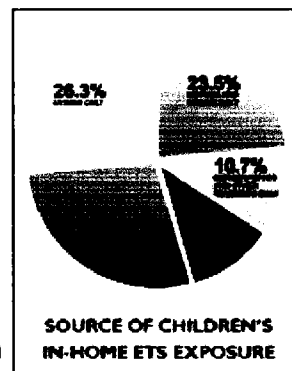
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The Science Behind the Risks

1. **The National Survey on Environmental Management of Asthma and Children's Exposure to Environmental Tobacco Smoke (NSEMA/CEE)** (U.S. Environmental Protection Agency, 2004)

Key findings:

- 11% of children aged 6 years and under are exposed to ETS in their homes on a regular basis (4 or more days per week) compared to 20% in the 1998 National Health Interview Survey (NHIS).
- Parents are responsible for 90% of children's exposure to ETS.
- Exposure to ETS is higher and asthma prevalence is more likely in households with low income and low education levels.
- Children with asthma have as much exposure to ETS as children without asthma.



Download a fact sheet summarizing this report: Fact Sheet: National Survey on Environmental Management of Asthma and Children's Exposure to Environmental Tobacco Smoke ([PDF](#), 89KB, 2 pgs, [About PDF](#))

2. **Respiratory Health Effects of Passive Smoking (Also Known as Exposure to Secondhand Smoke or Environmental Tobacco Smoke - ETS)** (U.S. Environmental Protection Agency, 1992)

Key findings:

In adults:

- ETS is a human lung carcinogen, responsible for

approximately 3,000 lung cancer deaths annually in U.S. nonsmokers. ETS has been classified as a Group A carcinogen under EPA's carcinogen assessment guidelines. This classification is reserved for those compounds or mixtures which have been shown to cause cancer in humans, based on studies in human populations.

In children:

- ETS exposure increases the risk of lower respiratory tract infections such as bronchitis and pneumonia. EPA estimates that between 150,000 and 300,000 of these cases annually in infants and young children up to 18 months of age are attributable to exposure to ETS. Of these, between 7,500 and 15,000 will result in hospitalization.
- ETS exposure increases the prevalence of fluid in the middle ear, a sign of chronic middle ear disease.
- ETS exposure in children irritates the upper respiratory tract and is associated with a small but significant reduction in lung function.
- ETS exposure increases the frequency of episodes and severity of symptoms in asthmatic children. The report estimates that 200,000 to 1,000,000 asthmatic children have their condition worsened by exposure to environmental tobacco smoke.
- ETS exposure is a risk factor for new cases of asthma in children who have not previously displayed symptoms.

View the full report: U.S. Environmental Protection Agency, Office of Research and Development, Office of Health and Environmental Assessment, Washington, DC, EPA/600/6-90/006F, December, 1992 (PDF, 525 pp, 4 MB, [About PDF](#)) **View a fact sheet summarizing this report:** www.epa.gov/smokefree/pubs/etsfs.html

3. Health Effects of Exposure to Environmental Tobacco Smoke
(California Environmental Protection Agency, 1997)

View the full report:

www.oehha.org/air/environmental_tobacco/finalets.html

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4. The National Toxicology Program's 9th Report on Carcinogens
(National Institutes of Health, 2000)

Key findings:

- In 2000, the National Institutes of Health (NIH) formally listed secondhand smoke as a known human carcinogen.

View a summary of the report:

www.nih.gov/news/pr/may2000/niehs-15.htm [EXIT disclaimer >](#)

5. Environmental Tobacco Smoke (Chapter 8, WHO Air Quality Guidelines for Europe, Second Edition) (World Health Organization)

View the full report: www.euro.who.int/air/activities/20050223_4

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6. **International Consultation on Environmental Tobacco Smoke (ETS) and Child Health** (World Health Organization, 1999)

View a summary of the meeting:

www.who.int/tobacco/resources/publications/general/en/

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7. **Report of the Scientific Committee on Tobacco and Health** (United Kingdom Scientific Committee on Tobacco and Health, 1998)

View the full report: [www.archive.official-](http://www.archive.official-documents.co.uk/document/doh/tobacco/contents.htm)

documents.co.uk/document/doh/tobacco/contents.htm

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8. **Australian National Health And Medical Research Council Report** (1997)

View the full report:

www.health.gov.au:80/nhmrc/publications/synopses/ph23syn.htm

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URL: <http://www.epa.gov/iaq/ets/healtheffects.html>



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Respiratory Health Effects of Passive Smoking (Also Known as Exposure to Secondhand Smoke or Environmental Tobacco Smoke ETS)

In 1992, the EPA completed its risk assessment on The Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders (PDF, 525 pp, 4MB, About PDF) and concluded that the widespread exposure to ETS in the United States presents a serious and substantial public health impact.

More specifically, EPA concluded that ETS is a human lung carcinogen, responsible for approximately 3,000 lung cancer deaths annually in U.S. nonsmokers.

Furthermore, infants and young children are especially sensitive to ETS. In children, ETS exposure is causally associated with:

1. an increased risk of lower respiratory tract infections such as bronchitis and pneumonia. (EPA estimates that 150,000 to 300,000 cases annually in infants and young children up to 18 months are attributable to ETS.),
2. an increased prevalence of fluid in the middle ear, symptoms of upper respiratory tract irritation, and small reductions in lung function, and
3. additional episodes and increased severity of symptoms in children with asthma. (EPA estimates that up to 1 million asthmatic children have their condition worsened by exposure to ETS.)

ETS exposure may also be a risk factor for the development of new cases of asthma. For more information on Asthma, visit the home page on Asthma and Indoor Environments.

Other Sources

- **Web Site: Smoke-free Homes**
- **Brochure: Secondhand Smoke: What you can do about secondhand smoke as parents, decision makers, and building occupants**
- **Fact Sheet: Respiratory Health Effects of Passive Smoking**
- **Fact Sheet: Setting the Record Straight: Secondhand Smoke is a Preventable Health Risk**

Citation:

Respiratory Health Effects of Passive Smoking (Also Known as Exposure to Secondhand Smoke or Environmental Tobacco Smoke ETS). U.S.

Environmental Protection Agency, Office of Research and Development,
Office of Health and Environmental Assessment, Washington, DC,
EPA/600/6-90/006F, 1992.

Contact Information:

Jennifer Jinot
by phone at: 2025643281
by fax at:
or by email at: jinot.jennifer@epa.gov

Downloads:

- Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders (PDF, 525 pp, 4 MB, about PDF)

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URL: <http://cfpub2.epa.gov/ncea/cfm/recorddisplay.cfm>



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Office of Air and Radiation
Office of Radiation and Indoor Air
Indoor Environments Division (6609J)
EPA Document Number 402-F-93-004, July 1993

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What is Secondhand Smoke?

- Secondhand smoke is a mixture of the smoke given off by the burning end of a cigarette, pipe, or cigar, and the smoke exhaled from the lungs of smokers.
- This mixture contains more than 4,000 substances, more than 40 of which are known to cause cancer in humans or animals and many of which are strong irritants.
- Secondhand smoke is also called environmental tobacco smoke (ETS); exposure to secondhand smoke is called involuntary smoking, or passive smoking.

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Secondhand Smoke Can Cause Lung Cancer in Nonsmokers

- Secondhand smoke has been classified by the U.S. Environmental Protection Agency (EPA) as a known cause of lung cancer in humans (Group A carcinogen).
- Passive smoking is estimated by EPA to cause approximately 3,000 lung cancer deaths in nonsmokers each year.

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Secondhand Smoke is a Serious Health Risk to Children

- The developing lungs of young children are also affected by exposure to secondhand smoke.
- Infants and young children whose parents smoke are among the most seriously affected by exposure to secondhand smoke, being at increased risk of lower respiratory tract infections such as pneumonia and bronchitis. EPA estimates that passive smoking is responsible for between 150,000 and 300,000 lower respiratory tract infections in infants and children under 18 months of age annually, resulting in between 7,500 and 15,000 hospitalizations each year.
- Children exposed to secondhand smoke are also more likely to have reduced lung function and symptoms of respiratory irritation like cough, excess phlegm, and wheeze.
- Passive smoking can lead to buildup of fluid in the middle ear, the most common cause of hospitalization of children for an operation.
- Asthmatic children are especially at risk. EPA estimates that exposure to secondhand smoke increases the number of episodes and severity of symptoms in hundreds of thousands of asthmatic children. EPA estimates that between 200,000 and 1,000,000 asthmatic children have their condition made worse by exposure to secondhand smoke. Passive smoking may also cause thousands of non-asthmatic children to develop the condition each year.

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Other Health Implications

- Exposure to secondhand smoke causes irritation of the eye, nose, and throat.
- Passive smoking can also irritate the lungs, leading to coughing, excess phlegm, chest discomfort, and reduced lung function.
- Secondhand smoke may affect the cardiovascular system, and some studies have linked exposure to secondhand smoke with the onset of chest pain.

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Protecting Your Health

What You Can Do to Reduce the Health Risks of Passive Smoking

In the Home:

- Don't smoke in your house or permit others to do so.
- If a family member insists on smoking indoors, increase ventilation in the

area where smoking takes place. Open windows or use exhaust fans.

- Do not smoke if children are present, particularly infants and toddlers. They are particularly susceptible to the effects of passive smoking.
- Don't allow baby-sitters or others who work in your home to smoke in the house or near your children.

Where Children Spend Time:

EPA recommends that every organization dealing with children have a smoking policy that effectively protects children from exposure to environmental tobacco smoke.

- Find out about the smoking policies of the day care providers, pre-schools, schools, and other care-givers for your children.
- Help other parents understand the serious health risks to children from secondhand smoke. Work with parent/teacher associations, your school board and school administrators, community leaders, and other concerned citizens to make your child's environment smoke free.

In the Workplace:

EPA recommends that every company have a smoking policy that effectively protects nonsmokers from involuntary exposure to tobacco smoke. Many businesses and organizations already have smoking policies in place but these policies vary in their effectiveness.

- If your company does not have a smoking policy that effectively controls secondhand smoke, work with appropriate management and labor organizations to establish one.
- Simply separating smokers and nonsmokers within the same area, such as a cafeteria, may reduce exposure, but nonsmokers will still be exposed to re-circulated smoke or smoke drifting into nonsmoking areas.
- Prohibiting smoking indoors or limiting smoking to rooms that have been specially designed to prevent smoke from escaping to other area of the building are two options that will effectively protect nonsmokers. The costs associated with establishing properly designated smoking rooms vary from building to building, and are likely to be greater than simply eliminating smoking entirely.
- If smoking is permitted indoors, it should be in a room that meets several conditions:

Air from the smoking room should be directly exhausted to the outside by an exhaust fan. Air from the smoking room should not be re-circulated to other parts of the building. More air should be exhausted from the room than is supplied to it to make sure ETS doesn't drift to surrounding spaces.

The ventilation system should provide the smoking room with 60 cubic feet per minute (CFM) of supply air per smoker. This air is often supplied by air transferred from other parts of the building, such as corridors.

Nonsmokers should not have to use the smoking room for any purpose. It should be located in a non-work area where no one, as part of his or her work responsibilities, is required to enter.

- Employer-supported smoking cessation programs are an important part of any smoking policy. Approximately 25 percent of American adults still smoke. Many smokers would like to quit, but cigarette smoking is physically and psychologically addictive, and quitting is not easy. While working in a smoke-free building may encourage some smokers to quit, a

goal of any smoking policy should be to actively support smokers who want to kick the habit.

- If there are designated outdoor smoking areas, smoking should not be permitted right outside the doors (or near building ventilation system air intakes) where nonsmokers may have to pass through smoke from smokers congregated near doorways. Some employers have set up outdoor areas equipped with shelters and ashtrays to accommodate smokers.

In Restaurants and Bars:

- Know the law concerning smoking in your community. Some communities have banned smoking in places such as restaurants entirely. Others require separate smoking areas in restaurants, although most rely on simply separating smokers and nonsmokers within the same space, which may reduce but not eliminate involuntary exposure to ETS.
- If smoking is permitted, placement of smoking areas should be determined with some knowledge of the ventilation characteristics of the space to minimize nonsmoker exposure. For example, nonsmoking areas should be near air supply ducts while smoking areas should be near return registers or exhausts.
- Ask to be seated in nonsmoking areas as far from smokers as possible.
- If your community does not have a smoking control ordinance, urge that one be enacted. If your local ordinances are not sufficiently protective, urge your local government officials to take action.
- Few restrictions have been imposed in bars where drinking and smoking seem to go together. In the absence of state or local laws restricting smoking in bars, encourage the proprietor to consider his or her nonsmoking clientele, and frequent places that do so.

In Other Indoor Spaces:

Does your state or community have laws addressing smoking in public spaces? Many states have laws prohibiting smoking in public facilities such as schools, hospitals, airports, bus terminals, and other public buildings. Know the law. Take advantage of laws designed to protect you. Federal laws now prohibit smoking on all airline flights of six hours or less within the U.S. and on all interstate bus travel.

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A Special Message For Smokers

This is a difficult time to be a smoker. As the public becomes more aware that smoking is not only a hazard to you but also to others, nonsmokers are becoming more outspoken, and smokers are finding themselves a beleaguered group.

If you choose to smoke, here are some things you can do to help protect the people close to you:

- Don't smoke around children. Their lungs are very susceptible to smoke. If you are expecting a child, quit smoking.
- Take an active role in the development of your company's smoking policy. Encourage the offering of smoking cessation programs for those who want

them.

- Keep your home smoke free. Nonsmokers can get lung cancer from exposure to your smoke. Because smoke lingers in the air, people may be exposed even if they are not present while you smoke. If you must smoke inside, limit smoking to a room where you can open windows for cross-ventilation. Be sure the room in which you smoke has a working smoke detector to lessen the risk of fire.
- Test your home for radon. Radon contamination in combination with smoking is a much greater health risk than either one individually.
- Don't smoke in an automobile with the windows closed if passengers are present. The high concentration of smoke in a small, closed compartment substantially increases the exposure of other passengers.

More than two million people quit smoking every year, most of them on their own, without the aid of a program or medication. If you want to quit smoking, assistance is available. Smoking cessation programs can help. Your employer may offer programs, or ask your doctor for advice.

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For More Information

Indoor Air Quality Information Clearinghouse (IAQ INFO)
P.O. Box 37133, Washington, DC 20013-7133
1-800-438-4318, (703) 356-4020
(fax) (703) 356-5386 or e-mail: iaqinfo@aol.com

A number of government agencies can provide additional information addressing the health risks of environmental tobacco smoke. These include:

Office on Smoking and Health/Centers for Disease Control [EXIT disclaimer ►](#)

Center for Chronic Disease Prevention and Health Promotion
Mail Stop K-50, 4770 Buford Highway
Atlanta, GA 30341
1-800-CDC-1311
(404) 488-5705

National Cancer Institute [EXIT disclaimer ►](#)

Building 31, Room 10A24
Bethesda, MD 20892
1-800-4-CANCER

The National Heart, Lung, and Blood Institute [EXIT disclaimer ►](#)

Information Center
4733 Bethesda Avenue, Suite 530
Bethesda, MD 20814
(301) 951-3260

National Institute for Occupational Safety and Health

[EXIT disclaimer ►](#)
4676 Columbia Parkway
Cincinnati, Ohio 45226-1998
1-800-35-NIOSH

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URL: <http://www.epa.gov/smokefree/pubs/etsbro.html>



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"Fact Sheet: Respiratory Health Effects of Passive Smoking"

Office of Research and Development, and Office of Air and Radiation
EPA Document Number 43-F-93-003, January 1993

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Summary

The U.S. Environmental Protection Agency (EPA) has published a major assessment of the respiratory health risks of passive smoking ([Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders](#) EPA/600/6-90/006F). The report concludes that exposure to environmental tobacco smoke (ETS) – commonly known as secondhand smoke – is responsible for approximately 3,000 lung cancer deaths each year in nonsmoking adults and impairs the respiratory health of hundreds of thousands of children.

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Background

EPA studies of human exposure to air pollutants indicate that indoor levels of many pollutants often are significantly higher than outdoor levels. These levels of indoor air pollutants are of particular concern because it is estimated that most people spend approximately 90 percent of their time indoors.

In recent years, comparative risk studies performed by EPA and its Science Advisory Board have consistently ranked indoor air pollution among the top five environmental risks to public health. EPA, in close cooperation with other federal agencies and the private sector, has begun a concerted effort to better understand indoor air pollution and to reduce peoples' exposure to air pollutants in offices, homes, schools and other indoor environments where people live, work and play.

Tobacco smoking has long been recognized as a major cause of death and disease, responsible for an estimated 434,000 deaths per year in the United States. Tobacco use is known to cause lung cancer in humans, and is a major risk factor for heart disease.

In recent years, there has been concern that non-smokers may also be at risk for some of these health effects as a result of their exposure ("passive smoking") to the smoke exhaled by smokers and smoke given off by the burning end of cigarettes. As part of its effort to address all types of indoor air pollution, in 1988, EPA's Indoor Air Division (now the Indoor Environments Division) requested that EPA's Office of Research and Development (ORD) undertake an assessment of the respiratory health effects of passive smoking. The report was prepared by ORD's Office of Health and Environmental Assessment.

The document has been prepared under the authority of Title IV of Superfund (The Radon Gas and Indoor Air Quality Research Act of 1986), which directs EPA to conduct research and disseminate information on all aspects of indoor air quality.

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Public and Scientific Reviews

A draft of this assessment was released for public review in June 1990. In December 1990, EPA's Science Advisory Board (SAB), a committee of independent scientists, conducted a review of the draft report and submitted its comments to the EPA Administrator in April 1991. In its comments, the SAB's Indoor Air Quality/Total Human Exposure Committee concurred with the primary findings of the report, but made a number of recommendations for strengthening it.

Incorporating these recommendations, the Agency again transmitted a new draft to the SAB in May of 1992 for a second review. Following a July 1992 meeting, the SAB panel endorsed the major conclusions of the report, including its unanimous endorsement of the classification of environmental tobacco smoke (ETS) as a Group A (known human) carcinogen.

EPA also received and reviewed more than 100 comments from the public, and integrated appropriate revisions into the final risk assessment.

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Major Conclusions

Based on the weight of the available scientific evidence, EPA has concluded that the widespread exposure to environmental tobacco smoke in the U.S. presents a serious and substantial public health risk.

In adults:

ETS is a human lung carcinogen, responsible for approximately 3,000 lung cancer deaths annually in U.S. nonsmokers. ETS has been classified as a Group A carcinogen under EPA's carcinogen assessment guidelines. This classification is reserved for those compounds or mixtures which have been shown to cause cancer in humans, based on studies in human populations.

In children:

ETS exposure increases the risk of lower respiratory tract infections such as bronchitis and pneumonia. EPA estimates that between 150,000 and 300,000 of these cases annually in infants and young children up to 18 months of age are attributable to exposure to ETS. Of these, between 7,500 and 15,000 will result in hospitalization.

ETS exposure increases the prevalence of fluid in the middle ear, a sign of chronic middle ear disease.

ETS exposure in children irritates the upper respiratory tract and is associated with a small but significant reduction in lung function.

ETS exposure increases the frequency of episodes and severity of symptoms in asthmatic children. The report estimates that 200,000 to 1,000,000 asthmatic children have their condition worsened by exposure to environmental tobacco smoke.

ETS exposure is a risk factor for new cases of asthma in children who have not previously displayed symptoms.

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Scope of the Report

In 1986, the National Research Council (NRC) and the U.S. Surgeon General independently assessed the health effects of exposure to ETS. Both of these reports concluded that ETS can cause lung cancer in adult non-smokers and that children of parents who smoke have increased frequency of respiratory symptoms and lower respiratory tract infections. The EPA scientific assessment builds on these reports and is based on a thorough review of all of the studies in the available literature.

Since 1986, the number of studies which examine these issues in human populations has more than doubled, resulting in a larger database with which to conduct a comprehensive assessment of the potential effects which passive smoking may have on the respiratory health of adults as well as children.

Because only a very small number of studies on the possible association between exposure to secondhand smoke and heart disease and other cancers existed in the scientific literature at the time this assessment was first undertaken, EPA has not conducted